

Listing of Claims:

- 1 1. (Currently amended): A backup processing method for backing up data to
2 be used by a data-processing computer system, the method comprising the steps of:
3 selecting resources in a usable state from a plurality of resources necessary for
4 backing up data, the data to be used by the data-processing computer system;
5 selecting switches in a usable state from a plurality of switches necessary for
6 forming routes among the selected resources;
7 determining which of the selected resources and selected routes are secure;
8 securing [[a]] one group of the selected resources and selected routes as a first
9 path for backup and another [[one]] group of the selected resources and selected routes as a
10 second path;
11 executing backup processing by using the first path and a backup instruction
12 command set having a plurality of backup commands, each backup command backing up a
13 different portion of the data, every portion of the data having a corresponding backup command,
14 the backup processing including executing one or more of the backup commands;
15 detecting if a problem occurs in the first path based on a result of execution of one
16 of the backup commands in the backup instruction command set;
17 changing from the first path to the second path if a problem is detected; and
18 continuing execution of the backup processing by using the second path and
19 executing backup commands in the backup instruction command sets that have not yet been
20 executed.
- 1 2. (Previously presented): A backup processing method according to claim
2 1, wherein backup processing is executed by using the first or the second path, and when the
3 backup processing has been fully executed by one or both of the paths, regarding the backup
4 processing as successful.

3-5. (Canceled)

1 6. (Original): A backup processing method according to claim 2, further
2 including a step of storing information relating to the backup processing of the backed-up data.

1 7. (Original): A backup processing method according to claim 2, further
2 including a step of storing information relating to whether the backup processing of the backed-
3 up data was successfully executed.

1 8. (Original): A backup processing method according to claim 7, wherein
2 data stored relating to the successful execution of the backup processing is used to determine if
3 the data can be restored.

9-15. (Canceled)

1 16. (Previously presented): A backup processing method according to claim 1
2 further comprising terminating execution of the backup processing if the second path is not
3 secured.

1 17. (Previously presented): A computer managing a system which includes a
2 plurality of resources, comprising:

3 a processing unit; and

4 a network interface connectable to the plurality of resources via a network,

5 wherein the processing unit is operable to:

6 select resources in a usable state from the plurality of resources necessary
7 for backing up data stored in a storage system;

8 determine which of the selected resources are secure;

9 secure a first group of the selected resources as a first path and a second
10 group of the selected resources as a second path for backup;

11 initiate first backup processing via the first path by issuing a backup
12 instruction command set via the network interface to the first group of resources, the
13 backup instruction command set having a plurality of backup commands, each backup

14 command effective to backup a portion of the data stored in the storage system, wherein
15 one or more of the backup commands are executed to backup one or more portions of the
16 data via the first path;
17 detect if a problem occurs in the first path based on a result of execution of
18 one of the backup commands;
19 initiate a change from the first path to the second path if the problem is
20 detected; and
21 initiate second backup processing via the second path by issuing a
22 remaining portion of the backup instruction command set via the network interface to the
23 second group of resources, the remaining portion of the backup instruction command set
24 including those backup commands which had not been previously executed.

1 18. (Previously presented): A computer according to claim 17, wherein the
2 processing unit terminates execution of the backup processing if the second path is not secured.

1 19. (Previously presented): A computer according to claim 18, wherein
2 backup processing is executed by using the first path or the second path, and if the backup
3 processing has completely executed using either or both of the first path or the second path, then
4 regarding the backup processing as successful.

1 20. (Previously presented): A computer according to claim 19 further
2 comprising a memory,
3 wherein the processing unit stores information relating to whether the backup
4 processing of the backed-up data was successfully executed,
5 wherein the processing unit indicates to execute data restore based on the
6 information.

1 21. (Previously presented): A computer according to claim 17 further
2 comprising a memory,

3 wherein the data that is backed up is referred to as backed-up data and can be
4 stored in a first storage resource in the first path or in a second storage resource in the second
5 path,

6 wherein the processing unit stores backup information relating to the backup
7 processing of the backed-up data into the memory, the backup information indicating which
8 portions of the backed-up data are stored in the first storage resource and which portions of the
9 backed-up data are stored in the second storage resource,

10 wherein the processing unit initiates restoring of the backed-up data based on the
11 backup information, including performing steps of:

12 accessing the backup information in connection with a first portion of the
13 backed-up data and determining whether the first portion is stored on the first storage
14 resource or on the second storage resource;

15 accessing either the first storage resource or on the second storage
16 resource to obtain the first portion; and

17 repeating the above steps for additional portions of the backed-up data, thereby
18 restoring the data from the backed-up data.

1 22. (Currently amended): A system comprising:

2 a storage system;

3 a plurality of library systems;

4 a plurality of copy devices;

5 a plurality of switches which are connectable among the storage system, the
6 plurality of library systems and the plurality of copy devices; and

7 a management computer connectable to the plurality of switches, the storage
8 system, the plurality of library systems and the plurality of copy devices via a network,

9 wherein the management computer is operative to:

10 select library systems in a usable state from the plurality of library systems
11 necessary for backing up data stored in the storage system;
12 select switches in a usable state from the plurality of switches necessary
13 for forming routes from the storage system to the selected library systems, thereby
14 securing a first group of selected library systems and selected switches as a first routes
15 for backup and securing a second group of selected library systems and selected switches
16 as a second route;
17 select a first copy device in a usable state from the plurality of copy
18 devices for the first routes and a second copy device in a usable state from the plurality of
19 copy devices for the second routes; and
20 initiate execution backup processing via the first routes by issuing backup
21 instruction command set including a plurality of backup commands, each backup
22 command indicating to transfer part of the data stored in the storage system to the copy
23 device, when the first and second routes are secured,
24 wherein the first copy device sends portions of data from the storage system to a
25 library system included in the first route in accordance with one or more of the backup
26 commands, and notifies the management computer if an error in the first route is detected,
27 wherein the management computer initiates execution backup processing via the
28 second ~~path~~-route by issuing a remaining portion of the backup instruction command set to the
29 second copy device if the management computer receives an error notification from the first
30 copy device,
31 wherein the second copy device sends data from the storage system to a library
32 system included in the second route in accordance with the remaining portion of the backup
33 instruction command set.

1 23. (Previously presented): A system according to claim 22, wherein the
2 management computer terminates execution of the backup processing if the second route is not
3 secured.

1 24. (Previously presented): A system according to claim 23, wherein backup
2 processing is executed by using the first route or the second route, and when the backup
3 processing has been successfully executed by at least one route, regarding the backup processing
4 as successful.

1 25. (Previously presented): A system according to claim 24,
2 wherein the management computer stores information relating to whether the
3 backup processing of the backed-up data was successfully executed,
4 wherein the management computer selects the first route based on the
5 information, indicates the copy device to execute data restore from a library system included in
6 the first route to the storage system via the first route.